MID-AMERICA REFINERY COMPANY (MARCO)
FPN: 088040
Comprehensive Removal Plan - 8 March 1999

PURPOSE:

The MARCO removal actions are authorized under Section 311© of the Federal Water Pollution Control Act ("Clean Water Act") as amended by the Oil Pollution Act of 1990, which allows for the removal of oil-contaminated materials and debris to mitigate or prevent a substantial threat of a discharge of oil.

The MARCO site is an abandoned oil refinery inclusive of the crude oil gathering lines which belonged to the refinery and were abandoned in the mid 1970s. The refinery was abandoned in 1981, leaving 138 onsite tanks (many of which still contained petroleum materials) to deteriorate. Both aboveground and underground piping were left with petroleum materials in them when the refinery shut down. Old memos found at the refinery, indicate that the piping and tanks leaked throughout the operation of the refinery. Soils on this site are heavily contaminated with petroleum material. The refinery sits on a slope with a gradient difference of 30 feet from the west to the east side of the site. The east side of the site has a drainage ditch which collects all refinery runoff and carries it through wetland areas to Village Creek and the Neosho River. These factors pose:

i. A substantial threat of a discharge of oil into or on navigable waters and/or the adjoining shorelines of navigable waters; and/or

ii. A substantial threat of a discharge of oil of such a size or character as to be a substantial threat to the public health or welfare of the United States.

BACKGROUND:

The Mid-America Refinery Company in Chanute, Kansas, is a 25-acre abandoned oil refinery. This facility operated as a crude oil processor from 1934 until 1981. During full production, MARCO processed approximately 2,800 barrels per day of crude oil stock. This stock was refined into diesel fuel, jet fuels, gasoline, oil and kerosene. The remaining crude bottom products were used to make asphalt.

An initial site investigation conducted by Kansas Department of Health and the Environment indicated that at least 40% of the 138 tanks that were on-site had inadequate diking. Surface soil samples found total petroleum hydrocarbon contamination up to 165,400 milligrams per kilogram (mg/kg). Excessive runoff and pools of oily water were noted throughout the site during heavy precipitation.

The property was bought by a trustee of the Robert Cooley Trust Fund in January 1994. Mr. Robert Moore is presently the trustee. Numerous Unilateral Administrative Orders (UAOs) have been issued to the trustee to clean-up this site. These UAOs have not been successful in

motivating the trust to clean-up the site.

A Comprehensive Environmental Response, Compensation, and Liability Act of 1980, (CERCLA) clean-up was conducted from August 1994 - March 1995. At that time asbestos was removed from tanks and pipes. Abandoned drums and containers of hazardous waste were collected, sampled, and transported off-site for disposal. The contents of the oil-water separator were excavated, solidified and disposed of. Numerous laboratory chemicals located in the abandoned buildings were lab-packed and removed as hazardous waste. Extensive mercury contamination was removed from several buildings on-site. Fifty-nine tanks, containing approximately 111,300 gallons of petroleum related waste remained on-site after this clean-up action due to the CERCLA petroleum exclusion provision.

After the CERCLA clean-up was completed, the trustee obtained the services of numerous scrap metal salvagers. These individuals scrapped numerous tanks and associated piping. Due to their scrapping efforts, tops and sides of tanks were cut off which allowed rainwater to collect in the tanks and the petroleum materials to directly discharge onto the ground. Because the site sits on a steep hill, run-off from rain events allowed these petroleum materials to discharge into a drainage ditch, that runs through a wetlands and discharges into Village Creek which discharges into the Neosho River, the source for drinking water for the city of Chanute.

On October 28, 1996, EPA issued a Unilateral Administrative Order, pursuant to Section 7003 of the Resource Conservation and Recovery Act, (RCRA), 42 U.S.C. 6973, to Mr. Moore and associated salvagers to cease dismantling activities on-site. This measure was taken after determining that there was imminent and substantial endangerment to human health and the environment because of the release and discharges, or threatened release and discharges, of oil and hazardous and/or solid wastes from the Site. In January 1997, this case was turned over to the Department of Justice for action. As of February 17, 1998 there were 27 tanks remaining on-site containing approximately 80,000 gallons of petroleum related materials.

TANK CONDITIONS:

During the 16 years that the refinery has been closed, the tanks had continued to rust and degrade. No maintenance, corrosion control, leak testing, etc., had been done to maintain the integrity of these tanks. Numerous tanks had no berms around them to serve as secondary containment in the event of any spills or tank failures. Oily water around some of the tanks that did have berms, indicated that the tank contents had leaked out. This had caused extensive soil contamination around and under the tanks. Salvagers further destroyed numerous tanks by cutting off tank tops and leaving product in the bottoms of the tanks, causing the contents to overflow onto the ground. None of the tanks that were onsite, were servicable due to their deterioriated condition.

Rusting underground and above ground piping was located throughout the site. The majority of the pipes still contained petroleum products. When salvagers worked on the site, improper techniques of cutting pipes which contained flammable petroleum products had resulted in numerous fires and petroleum discharges. Some of these fires crossed the road and burned out

wetland vegetation and fields. On several occasions, salvagers set tank contents on fire to remove the petroleum material in the tanks. Since the refinery is located adjacent to a housing area, the thick black smoke posed a substantial threat to public health and welfare of residents. There is evidence that petroleum contamination has reached ground water.

EPA ACTIONS

On December 29, 1997, the Coast Guard signed an Interagency Agreement with EPA to address the petroleum contamination and threat of petroleum materials release into waterways. This initial IAG was for $3,536,290. On February 17, 1998, EPA mobilized to the site to begin removal activities.

On September 28, the Coast Guard approved an increase of funding of $2,386,450. This increase was due to the fact that during the course of the excavation, several large petroleum material burial areas were found that were oozing up to the ground surface. Excavation of these areas substantially increased the amount of petroleum contaminated soil/sludge to be excavated and disposed of.

On January 21, 1999 the Coast Guard approved an increase of funding of $67,000. This increase of funding was requested to address an old pipeline which belonged to the MARCO site. An extension of the project period to 01/15/00 was also requested at that time. The circumstances surrounding the pipeline are as follows. On October 8, 1998, oil was discovered outside the MARCO property fence, to the east of the site in the drainage ditch. Due to the location of this oil, it was determined that the oil had not come from the MARCO property. It was unclear where the oil came from. At the time a clay cap was placed on the area to temporarily keep it from releasing into the drainage ditch. A fiber optic phone line is located in this area at an unknown depth so excavation at the time was not initiated to find the source of the oil.

On 21 October 1998, the director of the Neosho County Public Works Department visited the MARCO site. The issue of the oil in the drainage ditch was discussed and the engineer indicated that the oil may have come from an old crude oil gathering line that entered the MARCO property at the location of the oil spill that was found on 8 October. Heavy rains on 4 October may have filled the open portions of the pipeline with water which pushed the oil/water in the pipeline to the location to the east of the MARCO property.

On 22 October, the County engineer provided a 1 May 1949 map of the crude oil gathering pipeline which belongs to the MARCO property. In one drainage ditch, the county had broken the line during ditch maintenance. The county had secured the line. EPA found a small amount of soil contamination in this area. Boom was placed in the drainage ditch to ensure that the oil would not be released to other areas of the waterway until a plan addressing the pipeline could be arranged.

On 1 and 2 November, due to heavy rains, flooding conditions occurred in the area surrounding the Neosho River and Village Creek. When the flood waters began to recede rushing

water from fields was found to be undercuttting the soil banks surrounding the MARCO pipe. On 22 November, two leaks were discovered in the pipe. Approximately 15 gallons of crude oil was discharged into the drainage ditch. Clamps were placed on the pipe as a temporary measure.

On 12 February 1999, the EPA OSC contacted the Coast Guard requesting an increase of $1,500,000 to complete the project. This increase was requested due to the amount of heavily contaminated soil located on the downgradient portion of the property and also the fact that the pipeline removal project has been found to require a different, slower, thus more expensive approach to address the removal of the oil from the pipe and removal of the pipe in drainage areas. The majority of the pipeline is located on county right-of-ways and is filled with a crude oil/water mixture that spills into county ditches and waterways when the pipeline rusts and breaks, during normal ditch maintenance, and when farmers have tried to correct drainage problems on their fields and accidently cut into a MARCO line.

At the onset of the pipeline removal project, it was believed that there would not be a large amount of crude oil/water mixture found during the removal of the line and only a short section of the pipeline would have to be removed. This was based on the information that EPA had received that the pipeline had not been used to deliver crude oil to the refinery since the 1970s as its use had been discontinued several years before the refinery went bankrupt due to the massive leaks in the pipeline at that time. However, after removing 13,345 feet of pipe and recovering 9,137 gallons of oil in a line that in some areas has rusted through, the method of pipeline removal had to be adjusted to ensure that no oil releases occur during the pipe removal. Also, due to the very low price of crude oil at this time ($7.00/ barrel compared to $17.00/barrel one year ago) the material retrieved from the pipeline has proved not to be of any value to recycle/reuse. Therefore, the cost of disposal of this material has also contributed to an increase of the original projected cost of the pipeline removal.

This current increase was also requested due to the fact that the southeast portion of the property, the most downgradient portion, contains the most highly saturated soils. A review of old documents relating to the site indicate that just six years after MARCO began operations, the State Department of Health began sending letters to the refinery indicating that large amounts of petroleum materials were observed being discharged or running off site. Various agencies from the State of Kansas expressed their concern to the refinery about oil discharges on an almost annual basis. In fact, a letter dated April 15, 1959, discusses a leak that occurred which caused extensive oil releases into Village Creek and the Neosho River. It was believed at the time that the phenol taste in the city drinking water supply occurred due to the spill at MARCO. (Memo attached)

These activities are pursuant to Section 311, Public Act 101-380, in accordance with the National Contingency Plan. The National Pollution Fund Center (NPFC) will confirm all reimbursements following receipt and review of EPA documentation for each activity. This money will be used for emergency actions and cleanup oversight.

Attachments:

Attachment I - Detailed Cost Analysis
Attachment II - Scope of work
Attachment III - April 15, 1959 Memo from State Agency on MARCO contamination
Attachment IV - February 14, 1986 KDHE Preliminary Assessment Report for the Mid America Refinery. (Details chronological events in MARCO's history, i.e., spills, ownership, etc.)

ATTACHMENT 1
Revised Detailed Cost Analysis

It is estimated that the work on this site will take approximately 17 months. The removal began on 17 February 1998 and is expected to be completed by July 1999.

Region 7 EPA Costs		
Personnel Costs	4,320 hours =	$162,800
Travel Costs		25,840
TOTAL		$188,640

Superfund Technical Assessment & Response Team (START)		
Personnel Costs	4,320 hours =	$261,360
Travel Costs		23,760
TOTAL		$285,120

CLEANUP CONTRACTOR COSTS

Contractor Personnel	$ 2,412,763
Contractor Travel	416,238
Contractor Equipment	820,736
Supplies/Materials	209,843
Transportation/Disposal	2,704,000
Backfill	452,400
CLEANUP CONTRACTOR TOTAL	$7,015,980
TOTAL PROJECT COST	7,489,740

ATTACHMENT II
Scope of Work

The Contractor shall, at the discretion of the OSC:

Develop and implement a site-specific work plan including a proposed time line;

Develop and implement a site-specific health and safety plan;

Provide air monitoring, and site security as necessary; (No air monitoring or site security has been needed onsite).

Provide utility hookups, and command post:

Access refinery vessels and piping and remove oil and sludges from the refinery;

Transport and off-site disposal of oil from the refinery;

Remove all unserviceable tanks to access contaminated soils beneath tanks.

Containerize and treat oily water.(Utilizing the Springfield Belle, if available)

Remove oil-contaminated soils from beneath refinery structures;

Remove and dispose of sludge pit wastes.

Perform a treatability study on the oil-contaminated soils to determine the most cost-effective way of treating these soils on site; (Due to the massive amounts of contaminated soils and depth of contamination, remediation was determined not to be an option for cleanup of this site.)

Treat (or transport and dispose off-site) the oil-contaminated soils;

Final grading and vegetation of disturbed areas.

AMENDED TASKS TO THE SCOPE OF WORK:

Remove MARCO crude oil gathering pipeline and oil in areas where there is a threatened release to a waterway or potential release to a waterway.